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Education

- Dec. 2003 Ph.D. in Natural Resources and Environment, University of Michigan, Ann Arbor, MI.
Dissertation: “Shaping Sustainable Vehicle Fleet Conversion Policies based on Life Cycle Optimization and Risk Analysis”
- Apr. 2001 Certificate in Industrial Ecology, School of Natural Resources and Environment, University of Michigan, Ann Arbor, MI
- Aug. 2000 M. S. in Resource Policy and Behavior, School of Natural Resources and Environment, University of Michigan, Ann Arbor, MI
- Feb. 1995 M. S. E. in Inorganic Materials Engineering, Graduate School of Engineering, Seoul National University, Seoul, Korea
- Feb. 1993 B. S. E. in Inorganic Materials Engineering, College of Engineering Seoul National University, Seoul, Korea

Research Experience

- Jan. 2005 – present Research Associate, National Photovoltaic EH&S Center, Energy Sciences & Technology Department, Brookhaven National Laboratory. Upton, NY.
- Aug. 2006—present Research Collaborator, Center for Life Cycle Analysis, Columbia University, NY
- Jan. 2004 – Dec. 2004 Research Fellow, Center for Sustainable Systems, University of Michigan. Ann Arbor, MI.
- Sep. 1998 – Dec. 2003 Research Assistant, Center for Sustainable Systems, University of Michigan:
- Jan. 1995 - Aug. 1997 Research Engineer, Technical Center, Daewoo Motor Co., In-Cheon, Korea:

Teaching and Mentorship Experience

Jan 2004 – Aug 2004

Graduate Student Advisor. Yuhta Horie, M.S. Summer 2004 in Resource Policy and Behavior, School of Natural Resources and Environment, University of Michigan.

Journal Publications

- 2007 Fthenakis, V.M. and H.C. Kim. "Greenhouse-gas emissions from solar electric- and nuclear power: A life-cycle study," *Energy Policy*. Vol. 35 pp. 2549-2557.
- 2007 Fthenakis, V.M. and H.C. Kim, "CdTe Photovoltaics: Life Cycle Environmental Profile and Comparisons," *Thin Solid Films*, in press.
- 2006 Kim, H. C., G. A. Keoleian, and Y. A. Horie "Optimal Household Refrigerator Replacement Policy for Life Cycle Energy, Greenhouse Gas Emissions, and Cost," *Energy Policy*. Vol 34/15 pp. 2310-2323.
- 2006 Mason, J.E., V.M. Fthenakis, T. Hansen and H.C. Kim. "Energy Pay-Back and Life Cycle CO₂ Emissions of the BOS in an Optimized 3.5 MW PV Installation," *Progress in Photovoltaics: Research and Applications*. Vol. 14: 179-190.
- 2005 Spitzley, D. V., D. E., Grande, G. A. Keoleian, and H.C. Kim. "Life Cycle Optimization of Emissions Reductions and Ownership Costs in US Vehicle Retirement Decisions." *Transportation Research Part D: Transport and Environment*, Vol.10. pp 161-175.
- 2004 Kim, H. C., M. H., Ross, and G. A. Keoleian, "Optimal Fleet Conversion Policy from a Life Cycle Perspective," *Transportation Research Part D: Transport and Environment*, Vol.9 Issue 3. pp. 229-249.
- 2003 Kim, H. C., G. A. Keoleian, D. E. Grande, and J. C. Bean. "Life Cycle Optimization of Automobile Replacement: Model and Application," *Environmental Science & Technology*, Vol.37 Issue 23: pp 5407-5413.

Book Chapter

- 2007 Fthenakis, V.M. and H.C. Kim "Photovoltaics Life Cycle Analysis" in *Advances in Solar Energy*, International Solar Energy Society, in press.

Conference Papers

- 2006 Fthenakis V.M., Kim H.C., Colli A., Arellano A., Kirchsteiger C., and Ale B., Evaluation of Photovoltaics in a Comparative Context,

21st European Photovoltaic Solar Energy Conference, Dresden, Germany, 4-8 September 2006.

- 2006 V.M. Fthenakis and H.C. Kim, "CdTe Photovoltaics: Life Cycle Environmental Profile and Comparisons," European Material Research Society Meeting, Symposium O, Invited Paper. Nice, France. May 29-June 2, 2006.
- 2006 H.C. Kim and V.M. Fthenakis, "Amonix High-Concentrator Photovoltaic system: Life cycle energy demand and greenhouse gas emissions," 2006 IEEE 4th World Conference on Photovoltaic Energy Conversion, May 7-12. Waikoloa, Hawaii.
- 2006 V.M. Fthenakis and H.C. Kim, "Quantifying The Life-Cycle Environmental Profile Of Photovoltaics And Comparisons With Other Electricity-Generating Technologies," May 7-12. Waikoloa, Hawaii.
- 2006 Vasilis M. Fthenakis and Hyung Chul Kim. "Energy Use and Greenhouse Gas Emissions in the Life Cycle of CdTe Photovoltaics," Mater. Res. Soc. Symp. Proc. Vol. 895. 2006 Materials Research Society 0895-G03-06.
- 2005 V.M. Fthenakis and H.C. Kim, "A Review of Risks in the Solar Electric Life-Cycle," JRC/TREN Conference on Safety & Security of Energy Infrastructures in a Comparative View" (SEIF-CV), Brussels, Belgium. Nov. 14-16, 2005. European Commission, Directorate General Joint Research Center (JRC) / Energy and Transport (TREN).
- 2005 Spitzley, D. V., Grande, D. E., Kim, H. C. and Keoleian, G. A. "Life Cycle Economics and Replacement Optimization for a Generic U.S. Family Sedan." In SAE World Congress, SAE International, Technical Paper No. 2005-01-1553, Detroit, MI.
- 2003 Grande, D.E., J.C. Bean, G.A. Keoleian, H.C. Kim, H. Zhou. "Vehicle Replacement with Energy, Emissions and Economic Objectives." Proceedings of the International Conference of Industrial Engineering and Engineering Management, Shanghai, P. R. China, December 2003.
- 2000 Kim, H. C., G. A. Keoleian, S. Spatari, and J. W. Bulkley, Optimizing Vehicle Life Using Life Cycle Energy Analysis and Dynamic Replacement Modeling," Proceedings of the 2000 Total Life Cycle Conference, P-353, SAE International, Warrendale, PA, Paper No. 2000-01-1499: 241-25.

Presentations

- 2005 Kim, H. C. and Vasilis Fthenakis. "Life Cycle Greenhouse Gas Emissions from the Nuclear and Photovoltaic Fuel Cycle." 2005 Materials Research Society Fall Meeting. November 2005. Boston, MA
- 2003 Kim, H. C., G. A. Keoleian, and J. W. Bulkley, "Developing an Inspection and Maintenance Policy for High-Emitting Automobiles Using Reliability Analysis of Emission Control Systems." Poster presentation at "Industrial Ecology for a Sustainable Future," International Society for Industrial Ecology Conference. June 2003, University of Michigan, Ann Arbor, MI.
- 2002 Kim, H. C., "Vehicle Replacement Policy Using Life Cycle Optimization Modeling," Environmental Sustainability Conference and Exhibition: Land, Sea & Air Mobility. 8-10 April 2002, Society of Automotive Engineers, Graz Convention Center, Graz, Austria.
- 2001 Kim, H. C., G. A. Keoleian, and D. E. Grande, "Life Cycle Optimization of Vehicle Replacement," Poster presentation at U.S.-Korean Conference on Science, Technology, and Entrepreneurship. August 2001, MIT, Cambridge, MA.
- 2000 Kim, H. C., G. A. Keoleian, S. Spatari, and J.W. Bulkley, "Optimizing Vehicle Life Using Life Cycle Energy Analysis and Dynamic Replacement Modeling," 2000 Total Life Cycle Conference, Society of Automotive Engineers, Detroit, MI.

Professional Activities

- Member of Society of Automotive Engineers (SAE)
- Completed 3 SAE professional development programs:
 - "Automotive Fuel Cell Systems (Aug. 2003)"
 - "Catalytic Converters: Design and Durability (March 2003)"
 - "Practical Reliability Engineering, Testing & Growth Management (March 2002)"

Skills and Hobbies

- Proficiency in C, C++ and Excel
- Camping and Outside Activities
- Golf
- Rock Climbing
- Swimming

Award

- Apr. 2000 3M Prize for Outstanding Achievement in Industrial Ecology